

WHAT IS CLAIMED IS:

1. An image sensing apparatus comprising:

a plurality of image sensing elements each  
including a plurality of photoelectric conversion  
5 sections; and

an adding circuit adapted to add signals from said  
plurality of photoelectric conversion sections to  
obtain a one-pixel signal, wherein

said adding circuit adds the signals such that the  
10 one-pixel signals obtained by the addition are arranged  
at equal intervals in an area extending over said  
plurality of image sensing elements.

2. An image sensing apparatus according to claim  
15 1, wherein

the centroids of said photoelectric conversion  
sections are arranged at equal intervals in the area  
extending over said plurality of image sensing  
elements.

20 3. An image sensing apparatus according to claim  
1, wherein

said adding circuit includes a voltage adding  
circuit adapted to add the signals generated in said  
25 plurality of photoelectric conversion sections at a  
voltage level.

4. An image sensing apparatus according to claim  
3, wherein

5 said voltage adding circuit is arranged so as to  
add signals generated in photoelectric conversion  
sections of one image sensing element.

5. An image sensing apparatus according to claim  
3, wherein

10 said voltage adding circuit is arranged so as to  
add signals generated in photoelectric conversion  
sections in a plurality of image sensing elements.

6. An image sensing apparatus according to claim  
1, wherein

15 said adding circuit includes a charge adding  
circuit adapted to add charge levels of the signals  
generated in said plurality of photoelectric conversion  
sections.

20 7. An image sensing apparatus according to claim  
6, wherein

said charge adding circuit adds signals generated  
in photoelectric conversion sections of one image  
sensing element.

25

8. An image sensing apparatus comprising:  
a plurality of image sensing elements each

09912341-072601  
T09220-1-072601

including a plurality of photoelectric conversion sections; and

an adding circuit adapted to add signals from said plurality of photoelectric conversion sections to

5 obtain a one-pixel signal, wherein

each photoelectric conversion section is arranged such that the one-pixel signals obtained by the addition is arranged at equal intervals in an area extending over said plurality of image sensing  
10 elements.

9. An image sensing apparatus according to claim 8, wherein

the centroids of said photoelectric conversion sections are arranged at equal intervals in the area extending over said plurality of image sensing  
15 elements.

10. An image sensing apparatus according to claim 8, wherein  
20

said adding circuit includes a voltage adding circuit adapted to add charge levels of the signals generated in said plurality of photoelectric conversion sections.

25

11. An image sensing apparatus according to claim 10, wherein

said voltage adding circuit is arranged so as to add signals generated in photoelectric conversion sections of one image sensing element.

5           12. An image sensing element according to claim 10, wherein

said voltage adding circuit is arranged so as to add signals generated in photoelectric conversion sections in a plurality of image sensing elements.

10

13. An image sensing apparatus according to claim 8, wherein

said adding circuit includes a charge adding circuit adapted to add charge levels of the signals generated in said plurality of photoelectric conversion sections.

15

14. An image sensing apparatus according to claim 13, wherein

20           said charge adding circuit adds signals generated in photoelectric conversion sections of one image sensing element.

25

15. An image sensing apparatus comprising:  
a plurality of image sensing areas each including a plurality of photoelectric conversion sections, wherein said plurality of photoelectric conversion

sections included in each image sensing area include photoelectric conversion sections having different areas;

an adding circuit adapted to add signals from said plurality of photoelectric conversion sections to obtain a one-pixel signal, wherein said adding circuit adds the one-pixel signals such that the one-pixel signals obtained by the addition are arranged at equal intervals in an area extending over said plurality of image sensing areas.

16. An image sensing apparatus comprising:

a plurality of image sensing areas each including a plurality of photoelectric conversion sections, wherein said plurality of photoelectric conversion sections included in each image sensing area include photoelectric conversion sections having different areas; and

an adding circuit adapted to add signals from said plurality of photoelectric conversion sections to obtain a one-pixel signal, wherein each photoelectric conversion section is arranged such that the one-pixel signals obtained by the addition are arranged at equal intervals in an area extending over said plurality of image sensing areas.

17. An image sensing apparatus comprising:

a plurality of image sensing areas each including  
a plurality of photoelectric conversion sections;

a plurality of output sections adapted to output a  
signal on an each image sensing area basis; and

5 an image processing circuit adapted to perform a  
processing so as to obtain an image from a first one-  
pixel signal obtained by adding signals from said  
plurality of photoelectric conversion sections  
extending over said plurality of image sensing areas  
10 and a second one-pixel signal obtained from each  
photoelectric conversion section.

18. An image sensing apparatus according to claim  
17, wherein

15 the first one-pixel signal and the second one-  
pixel signal are arranged at equal intervals in an area  
extending over said plurality of image sensing areas.

19. An image sensing apparatus comprising:

20 a plurality of image sensing areas each including  
a plurality of photoelectric conversion sections;

a plurality of output sections adapted to output a  
signal on a each image sensing area basis; and

25 an adding circuit adapted to, when signals from  
said plurality of photoelectric conversion sections are  
added to obtain a one-pixel signal, add the signals  
from said plurality of photoelectric conversion

091341-02201  
1022/01-TH-660

sections extending over said plurality image sensing areas to obtain said one-pixel signal.

20. An image sensing apparatus according to claim  
5 1, further comprising:

a scintillator plate;

a signal processing circuit adapted to process  
signals from said image sensing elements; and

a radiation source adapted to generate radiation.

10

21. An image sensing apparatus according to claim  
8, further comprising:

a scintillator plate;

a signal processing circuit adapted to process  
15 signals from said image sensing elements; and

a radiation source adapted to generate radiation.

22. An image sensing apparatus according to claim  
17, further comprising:

20 a scintillator plate;

a signal processing circuit adapted to process  
signals from said image sensing areas; and

a radiation source adapted to generate radiation.

23. An image sensing apparatus according to claim  
25 19, further comprising:

a scintillator plate;

109220-1-1000000

a signal processing circuit adapted to process signals from said image sensing areas; and  
a radiation source adapted to generate radiation.

5           24. An image sensing apparatus comprising a plurality of image sensing areas adapted to sense an object image,

09912341-072301  
10           wherein said object image is sensed over said plurality of image sensing areas and each image sensing area is provided with a plurality of photoelectric conversion sections, wherein scanning circuit is arranged inside part of said photoelectric conversion sections, and wherein centroids of said photoelectric conversion sections in which said scanning circuits are  
15 arranged and centroids of said photoelectric conversion sections in which said scanning circuits are not arranged are arranged at equal intervals.

20           25. An image sensing apparatus comprising a plurality of image sensing areas each including a plurality of photoelectric conversion sections,

25           wherein an object image is sensed over said plurality of image sensing areas and each of said plurality of image sensing areas has a first area in which a scanning circuit is arranged between photoelectric conversion sections and a second area in which said scanning circuit is not arranged between



5 said photoelectric conversion sections, and wherein  
centroids of said photoelectric conversion sections of  
said first area and centroids of said photoelectric  
conversion sections of said second area are arranged at  
equal intervals.

10 26. An image sensing apparatus according to claim  
24, wherein said scanning circuit is provided with a  
shift register.

27. An image sensing apparatus according to claim  
26, wherein said shift register is a static type.

15 28. An image sensing apparatus according to claim  
24, wherein said scanning circuit is provided with a  
decoder.

20 29. An image sensing apparatus according to claim  
24, wherein a power supply line is arranged on said  
scanning circuit.

30. An image sensing apparatus comprising a  
plurality of image sensing areas,  
wherein an object image is sensed over said  
25 plurality of image sensing areas and each image sensing  
area is provided with a plurality of photoelectric  
conversion sections, wherein a common processing

31. An image sensing apparatus comprising a  
plurality of image sensing areas each including a  
15 plurality of photoelectric conversion sections.

wherein an object image is sensed over said plurality of image sensing areas and each of said plurality of image sensing areas has a first area in which a common processing circuit adapted to selectively output to the outside signals from a vertical output line to which signals from said plurality of photoelectric conversion sections in said vertical direction are read out, via a horizontal output line is arranged between said photoelectric converting areas, and second area in which said common circuit is not arranged between said photoelectric conversion sections, and wherein centroids of said

photoelectric conversion sections of said first area and centroids of said photoelectric conversion sections of said second area are arranged at equal intervals.

5           32. An image sensing apparatus according to claim 30, wherein said common circuit is provided with a multiplexer.

10           33. An image sensing apparatus according to claim 30, wherein said common processing circuit is provided with an amplifier adapted to amplify signals transferred to said horizontal output line.

15           34. An image sensing apparatus according to claim 30, wherein a power supply line is arranged on said common processing circuit.

20           35. An image sensing apparatus comprising a plurality of image sensing areas,  
wherein an object image is sensed over said plurality of image sensing areas and each image sensing area is provided with a plurality of photoelectric conversion sections, wherein light shielding region is arranged inside part of said photoelectric conversion  
25 sections and wherein centroids of said photoelectric conversion sections in which said light shielding sections are arranged and centroids of said

092241-07203  
FOI2014-07203

photoelectric conversion sections in which said light shielding sections are not arranged are arranged at equal intervals.

5           36. An image sensing apparatus according to claim 35, wherein a scanning circuit is arranged under said light shielding region.

10           37. An image sensing apparatus according to claim 36, wherein said scanning circuit is provided with a shift register.

15           38. An image sensing apparatus according to claim 37, wherein said shift register is a static type.

          39. An image sensing apparatus according to claim 36, wherein said scanning circuit is provided with a decoder.

20           40. An image sensing apparatus according to claim 35, wherein a common processing circuit adapted to selectively output to the outside signals from a vertical output line to which signals from said plurality of photoelectric conversion sections in a  
25           vertical direction are read out, via a horizontal output line is arranged under said light shielding region.

09012344.072604  
FOUO 20. THE 2000

41. An image sensing apparatus according to claim 35, wherein said common processing circuit is provided with a multiplexer.

5           42. An image sensing apparatus according to claim 35, wherein said common processing circuit is provided with an amplifier adapted to amplify the signals transferred to said horizontal output line.

10           43. An image sensing apparatus comprising a plurality of image sensing areas,  
              wherein an object image is sensed over said plurality of image sensing areas and each image sensing area is provided with a plurality of photoelectric  
15           conversion sections, wherein light shielding regions are arranged inside said plurality of photoelectric conversion sections, and wherein centroids of said photoelectric conversion sections in which said light  
20           shielding regions are arranged are arranged at equal intervals.

44. An image sensing apparatus according to claim 43, wherein a scanning circuit is arranged under said light shielding regions.

25

45. An image sensing apparatus according to claim 43, wherein said scanning circuit is provided with a

09912344-072901  
FO9220-14E1660

shift register.

46. An image sensing apparatus according to claim 45, wherein said shift register is a static type.

5

47. An image sensing apparatus according to claim 44, wherein said scanning circuit is provided with a decoder.

10

48. An image sensing apparatus according to claim 43, wherein a common processing circuit adapted to selectively output to the outside signals from a vertical output line to which signals from said plurality of photoelectric conversion sections in a vertical direction are read out, via a horizontal output line is arranged under said light shielding regions.

15

49. An image sensing apparatus according to claim 48, wherein said common processing circuit is provided with a noise eliminating circuit.

20

50. An image sensing apparatus according to claim 48, wherein said common processing circuit is provided with an A/D converter.

25

51. An image sensing apparatus according to claim

09912441.072601  
T0927072601

48, wherein said common processing circuit is provided with a multiplexer.

52. An image sensing apparatus according to claim 5 48, wherein said common processing circuit is provided with an amplifier adapted to amplify signals transferred to said horizontal output line.

53. An image sensing apparatus comprising a 10 plurality of image sensing areas each including a plurality of photoelectric conversion sections,

wherein an object image is sensed over a plurality of image sensing areas and each of said plurality of image sensing areas has a first area in which a 15 scanning circuit and/or a common processing circuit adapted to selectively output to the outside signals from a vertical output line to which signals from said plurality of photoelectric conversion sections in the vertical direction are read out, to a horizontal output 20 line are arranged between said photoelectric conversion sections, and a second area in which said scanning circuit and said common circuit are not arranged between said photoelectric conversion sections, and wherein light shielding means is arranged such that 25 centroids of said photoelectric conversion sections of said first area and centroids of said photoelectric conversion sections of said second area are arranged at

09912341.072601  
FO9229 THE2T660

equal intervals.

54. An image sensing apparatus according to claim  
25, further comprising:

- 5       a scintillator plate;  
      a signal processing circuit adapted to process  
signals from said image sensing areas; and  
      a radiation source adapted to generate radiation.

10       55. An image sensing apparatus according to claim  
31, further comprising:

- a scintillator plate;  
      a signal processing circuit adapted to process  
signals from said image sensing areas; and  
15       a radiation source adapted to generate radiation.

56. An image sensing apparatus according to claim  
35, further comprising:

- a scintillator plate;  
20       a signal processing circuit adapted to process  
signals from said image sensing areas; and  
      a radiation source adapted to generate radiation.

57. An image sensing apparatus according to claim  
25 43, further comprising:

- a scintillator plate;  
      a signal processing circuit adapted to process

0994341.07601  
T09220 THE2F660



signals from said image sensing areas; and

a radiation source adapted to generate radiation.

58. An image sensing apparatus according to claim

5 53, further comprising:

a scintillator plate;

a signal processing circuit adapted to process  
signals from said image sensing areas; and

a radiation source adapted to generate radiation.

10

091244.072604  
FOIA b7D